

NEWSLINE

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FROM THE
DIRECTOR'S
OFFICE

Den Fisher

The Lab's path forward for ISM

In September, the Laboratory passed a major milestone when DOE verified that we had implemented our Integrated Safety Management System (ISMS). Outside reviewers told us we had an effective safety program in place, one that will help us continue to improve our safety record and provide added protection of our employees and the public.

Our safety record has improved by more than a factor of two since ISM began. Everyone at the Laboratory has contributed to that success. So does that mean we are "done" with ISM? Not at all. ISM is a way of doing our work safely every day. Although we have made tremendous progress over the past two years, we still have a way to go.

There are several categories of improvements needed to achieve the kind of system the Laboratory needs. First, the verification team identified a number of specific opportunities for improvement.

Principal among these was the need to strengthen the process used for facility hazard analysis and identification of controls. This work is already under way and will be completed over the next six months. There is also a set of improvements that were already planned by the Laboratory prior to verification. Here are some of these improvements, most of which are under way:

- Provide more effective tools for creating Integration Work Sheets.
- Upgrade the Hazardous Materials Inventory Management system and ChemTrack.
- Improve and streamline training for facility-points-of-contact (FPOCs).
- Revise and approve new Directorate ISM Implementation Plans.

See **DIRECTOR'S OFFICE**, page 8

Researcher rings up Bell prize for computing

By Don Johnston

NEWSLINE STAFF WRITER

Bruce Curtis of Computation has for the second consecutive year been a member of a team receiving high performance computing's most prestigious award — a Gordon Bell Prize.

The 13-member team won in the "special" category for "High-Performance Reactive Fluid Flow Simulations Using Adaptive Refinement on Thousands of Processors." The award was announced in November at SuperComputing 2000 in Dallas, Texas.

"We completed the largest and highest-resolution 3D simulation to date of the propagation of a detona-



DON JOHNSTON/NEWSLINE

Bruce Curtis

tion front through stellar material," said Curtis, a 20-year Lab veteran currently working in the Lab's Center for Applied Scientific Computing. "This helps determine

how a supernova explodes, and aids in the understanding of the origin and evolution of the chemical elements."

Members of the team represent University of Chicago's Center for Astrophysical Thermonuclear Flashes, Intel Corp., Drexel University, the NASA Goddard Space Flight Center and the Lab. The University of Chicago center is an Accelerated Strategic Computing Initiative (ASCI) Alliance Center.

The calculation achieved a sustained performance of 238 gigaflops per second (billions of operations per second) on 6,420 processors of the ASCI Red computer at Sandia Albuquerque in August. "The scale

See **BELL**, page 8

Santa Claus is cruisin' to town



St. Nick, who is sometimes known as Paul Ahre of the Manufacturing & Materials Engineering Division, is riding in style as he gets ready to deliver holiday cheer. Santa boarded his Harley to visit with children at Portola elementary school in Livermore.

Over the last two weeks, Lab groups have been reaching out to the community to assist families in need over the holidays. For more, see page 5.



JULIE KORHUMMEL/NEWSLINE

DDLS explores the global warming trend ahead

By Sheri Byrd

NEWSLINE STAFF WRITER

The world is getting warmer, creating a global forecast for increased precipitation, a retreat of mountain glaciers and a thinning of Arctic ice.

"Our data shows that the 1990s were the warmest decade in a thousand years, and 1998 was the warmest year in a thousand years," reported Thomas R. Karl, director of National Oceanic and Atmospheric Administration's National Climatic Data Center. Karl came to the Lab

last week to present his findings as part of the Director's Distinguished Lecturer Series.

Karl said most data involved in these conclusions dates from formal measurements that began in 1860.

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Carlsen's Kazakhstan crusade a lesson in ecology, anthropology
— Page 3



Lab scrapping its hoppers for bigger, better
— Page 4



LAB COMMUNITY NEWS

Weekly Calendar

Technical Meeting Calendar, page 4

Friday
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With the current power shortages in California, Lab employees are being reminded to please **turn off computers** and other electronic equipment before leaving today for the holidays. Not only does this save power, it is also a good computer security measure.

...

The **South Cafe** is closed today through Friday, Dec. 29. The **Central Cafe** will be open for breakfast service. The **West, Central** and **Roadrunner Cafes** will be open for lunch service, operating their normal business hours and offering a modified menu. All cafes will resume their regular hours of operation and service on Jan. 3. For online menus, see the Web at https://www-ais.llnl.gov/llnl_only/docs/bsd/food/menu/menu.html. Contact: Mishell Pendleton, 2-0105.

...

Office **Christmas trees** must be stripped of decorations and removed for collection to the nearest curbside by the close of business today. Hazards Control asks that employees remove the trees from facilities prior to the holidays to avoid creating a fire hazard. Laboratory gardeners will collect the trees for chipping and use as soil amendments around the site. Tree collection is scheduled for Wednesday, Dec. 27. Contact: Earth Hotline (E-ARTH or 3-2784).

...

If you use the **Bldg. 318 lockers**, please empty your locker today. All lockers will be opened by LLESA staff during the waxing process. Any contents found in the lockers will be bagged and taken to the LLESA Office. Locker contents can be claimed in Bldg. 415 beginning Monday, Jan. 8, from 10 a.m. to 4:30 p.m. Contact: LLESA Office, 2-9402.

Monday
25

The **Laboratory is closed** Monday and Tuesday. Happy holidays.



LLESA and the American Red Cross are again partnering to save lives through the **LLNL Blood Drive**, beginning Jan. 3 in Bldg. 415. Hours are 10 a.m. to 4 p.m. Jan. 3, and 7:30 to 1:30 p.m. Jan. 4, 5 and 8. You are encouraged to schedule an appointment by calling Mandy Monk at 510-594-5211. If your schedule does not permit you to make an appointment, the Blood Bank will work you into the schedule when you drop in.

...

Rachael Lavezzo, executive director of the Livermore Main Street Project, will discuss plans for the city at the next **Business Women's Network (BWN)** meeting on Wednesday, Jan. 3, at the Best Western Monarch Hotel. The dinner meeting begins at 5:30 p.m., with Lavezzo speaking at 7:30 p.m. RSVP by Dec. 29. Contact: BWN, 806-8177.

Environmental overview



DON GONZALEZ/TID

Carolyn Huntoon, assistant secretary for environmental management in the Department of Energy (center), visited the Lab recently for a briefing on restoration and waste management programs. During her visit, she met with, from left, DOE's Hannibal Joma and the Lab Environmental Protection Department's Albert Lamarre, Judy Steenhoven and Ellen Raber.

NEWSMAKERS

Explosive soccer: nitrogen fullerene

The discovery of soccer-shaped C₆₀ as a new allotropic form of carbon opened the door to a flood of exciting opportunity in nanoscience.

In a recent scientific article, Lab computational chemist, Riad Manaa, reported results [Chem. Phys. Lett. 331, 262 (2000)] of an exotic analog made entirely of nitrogen. Manaa suggested that N₆₀, a super-high-energy molecule, could be assembled from six bicyclic N₁₀ molecules.

The work is poised to attract widespread attention, as it is being mentioned in the Dec. 18 issue of the American Chemical Society's weekly newsmagazine, *Chemical & Engineering News (C&EN)*.

Manaa's calculations indicate that the N₁₀ molecule contains a mixture of single and double bonds and would be relatively stable. He further proposes that six of the N₁₀ molecules might be able to form a buckminster molecule of N₆₀.

The Lab scientist is now expanding on the work, studying possible routes to the formation and N₁₀ and its detection in the gas-phase, in a

joint collaborative effort with academia.

He is also considering other boron-based analogs. As noted in *C&EN*, Manaa indicates that N₆₀ would likely have to be prepared under extreme conditions, but concludes, "It is, however, the rare events that distinguish chemical research."

Ron Weinberg elected to Sigma Xi's national board of directors

Ron Weinberg, president of the LLNL Chapter of Sigma Xi, was elected to a three-year term on the society's national board of directors, from July 1, 2001-June 30 2004.

The election took place at the society's annual meeting in Albuquerque, N.M., in November. The board seat represents the society's constituency area groups, industries, state and federal laboratories.

Weinberg will use the board seat to promote some of the successful programs developed at the Laboratory, including Science on Saturday, and active participation in local science fairs and other activities that encourage students to seek careers in the sciences.

Mail Services scales back deliveries until Jan. 8

Mail service will move to once a day delivery beginning Wednesday, Dec. 27. Normal business service will resume on Monday, Jan. 8.

Mail Services has scaled back its deliveries during the holidays for the past seven years. Most Lab employees do not experience a drop off in service, since mail volume is reduced during that time.

For more information, call Mail Services at 2-7511.

Flu shots still available

Health Services still has 350 doses of flu vaccine available.

If you are interested in receiving the vaccine, you may walk in at any time to the clinic, held in Bldg. 663, Monday through Friday, between 8:30 a.m. and 3:30 p.m. through the remainder of the year, or until all the vaccine has been dispensed.

The cost is \$5. Please bring exact change.

Newsline

Newsline is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for the information of Laboratory employees and retirees.

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AROUND THE LAB

Laboratory ecologist visits Kazakhstan nuclear test site

By Elizabeth Campos Rajs
NEWSLINE STAFF WRITER

Tina Carlsen, an ecologist in the Lab’s Environmental Protection Department, was one of five scientists chosen nationally earlier this year to participate in the National Research Council’s Young Investigator Program.

As a result, she had an opportunity in August to visit Kazakhstan for two weeks to evaluate the status of research on health and environmental impacts of nuclear testing at the Semipalatinsk Test Site.

“The whole thing was quite educational,” Carlsen said. “It was a great experience.”

She is now exploring collaborative opportunities with other Lab scientists to continue her research in that area and has begun meeting with Nina Rosenberg and Richard Knapp of Geosciences and Environmental Technologies, who also recently visited Kazakhstan for LLNL’s energy and environmental security initiative.

As an ecologist at the Lab, Carlsen has been involved in a number of studies to measure the effects of contaminants and radionuclides on the environment. So when Ellen Raber, deputy director of EPD, suggested she apply for the Young Investigator Program, the Kazakhstan visit in particular piqued her interest.

“This project caught my attention because of the ecological implications,” Carlsen said. “We didn’t actually sit down and run experiments in a lab during the visit. I would love to do ecological studies there, evaluating the potential exposure pathways on the types of species that occur at the site.”

Her group of five scientists included an assistant professor of genetic epidemiology from the Baylor College of Medicine, a chemist for the National Center for Atmospheric Research, a radiobiologist/cytogeneticist from Colorado State University and a cultural anthropologist from Texas A&M University.

“What was really interesting was one of the participants was a cultural anthropologist who was interested in talking to villagers who lived close to the for-



Tina Carlsen

mer test site and asking them what they knew about radiation, their opinions about it, what they have observed and what information they have been given. That’s not something I would have thought of,” Carlsen said. “As an ecologist, I was interested in knowing how the radionuclides were effecting the ecology of the area, and they spoke of how they used and interacted with the ecosystem.”

In addition to meeting with villagers, she also met with Kazakhstani scientists at a number of institutes and universities.

The former test site is approximately 100 square miles of contaminated land and it is completely unregulated, she said. “Nomadic people are using it now,” she noted.

The test site was used by the Soviet Union from 1949 to 1989 for a reported 498 nuclear tests. Most of

the scientists and researchers she met during the trip said that all of the currently observed health effects were a result of exposure during the period of testing and were not a consequence of residual radioactivity, Carlsen said.

She has written up her observations and the results of her discussions with Kazakhstani scientists, which will be included in a report by all five participants on the Web. She hopes to turn the trip report into an article that can be published in the “Human & Ecological Risk Assessment” journal.

“I’m hoping there will be follow-up work,” Carlsen said. “I would really like to make sure that all the funded research is coordinated and reviewed where the results could be used internationally. If there is a study of the radionuclide distribution, then I could do an ecological study.”

In addition to the scientific aspect of the trip, the two weeks spent in a former Soviet Union state was also culturally enlightening, Carlsen said.

The first week was spent in Almaty, the former capital of Kazakhstan and home of most of the nation’s institutes and major universities.

“We stayed in a Russian-era hotel. It was clean and safe, but not what we are used to in the West. It was a small room with a twin bed and no air conditioning. While we were there, the temperature was about 90 degrees,” Carlsen said.

In northern Kazakhstan where the test site is located, the lodgings were sparse. “It looked like an industrial, bombed out city. Half of the hotel was not lit, there was no hot water and the locks on the doors didn’t work. We didn’t feel safe. The women in the group doubled up in the rooms,” she said.

The villages the scientists visited were very primitive, with dirt streets and no running water. “But everyone had electricity. I asked about that and they said it was very important to the Soviets that most of the nation have electricity. It was something they could tell the outside world,” Carlsen said.

“We were in Kazakhstan two weeks. That was a long time to be in a place so foreign.”

NIF warehouse staff
lauded for exemplary
safety performance

The National Ignition Facility (NIF) warehouse staff was commended last Friday by the NIF Project Manager Ed Moses for its exemplary safety record, notably for completing fiscal year 2000 with no reportable accidents.

“This accomplishment is particularly significant since the NIF warehousing and materials management activities include many hazardous operations that are often repetitive,” Moses told the warehouse staff members. “Conducting these operations without accidents is clearly the result of your team’s constant safety vigilance and the proper application of the safety tools made available to you.”

The 52,000-square-foot warehouse, located offsite on Patterson Pass Road, opened two years ago and is responsible for receiving and delivering all materials for the NIF project.

“They are involved with everything from the smallest of screws to 45-ton vacuum vessels in support of the NIF project,” noted Mitch Neto, NIF Materials manager.

The eight-member warehouse staff, led by Jim Collins, was also recognized for maintaining its safety record at the three-and-a-half acres of material staging areas that are located on the main LLNL site. These areas include three



From left: Safety winners Lee Baker, Kevin King, Jim Collins, Joe Lamendola, Bill Holloway, Pete Norton, Marna Casey, George Bonawitz, Jeff Jordan and Mitch Neto.

buildings, three tents and a large material storage area along West Perimeter Drive.

“They’ve conducted their operations extremely well,” said Rob Broderick, NIF Mechanical Systems production manager, who helped arrange the small recognition ceremony at the warehouse last Friday. “We wanted to recognize them for their success as a team and for their individual efforts. We know that the ultimate success of any safety program depends primarily on the willing support of the individual participants.”

Moses presented each warehouse employee with a personal memo of appreciation and a certificate. He also presented the warehouse team with an engraved plaque recognizing their exemplary safety performance.



CIO
UPDATE

Windows 2000 Statement of Direction
comment period closes Jan. 5

Last week LLNL’s Computer Security Council and the Chief Information Officer announced a Request for Comment for the “Windows 2000 Statement of Direction.” Since the comment period includes the holidays, the council and CIO offer this reminder so employees might submit their comments before the period ends on Jan. 5.

Employee comments are an important part of the development of LLNL’s Information Architecture. Employees are invited to read and comment on a proposed Information Architecture Statement of Direction, IA-0A02: Microsoft Windows 2000 Implementation for Unclassified Computing Environments. This document describes a strategic direction for enabling the successful, planned deployment of the Windows 2000 architecture at LLNL.

This document recommends that operating systems in the Windows 2000 product family (i.e., Windows 2000 Professional, Advanced Server, and Datacenter Server) be installed at LLNL only in the following modes:

- In a stand-alone configuration;
- As members of Windows NT 4.0 domains;
- In isolated test environments

The Desktop Advisory Group (DAG) maintains a list of Windows 2000 certified applications.

For more information and to submit any comments you have by clicking the “Comments” button at <http://www.llnl.gov/projects/ia/rfc/ia0a02/ia0a02.html>



NEWS YOU CAN USE

DUS to scrap old hoppers for bigger ways to recycle



JULIE KORHUMMEL/NEWSLINE

Ralph Lopez, the lab’s scrap bin master.

Beginning the first week of January, the Donation, Utilization and Sales (DUS) group will coordinate the exchange of the aging scrap hoppers with new replacements.

The new hoppers have a larger capacity and will be easier for DUS to process scrap materials received from the programs.

The new hoppers are for clean scrap metal only. The following items are not to be disposed of in hoppers: garbage, asbestos, radioactive material, chemicals, oils, compressed gasses, pressurized containers, pumps, capacitors, biohazard material, powders, liquids, DOE/LLNL property numbered items, electronics, and items that weigh over 75 pounds.

DUS personnel will contact the building coordinator if any restricted items are found in the hoppers. Scrap hoppers are picked up from the facility by Plant Engineering personnel on the first and third Wednesday of each month and delivered to DUS for the sorting of scrap material for recycling.

For more information, please contact DUS at 2-9773 or 4-4103.

INTERNAL TRANSFER OPPORTUNITIES

Tag	Requisition	Classification	Title	Organization
TC	1324	153.3	Principal management analyst	Telecommunications Systems
TI	1389	164.2	Technical editor/writer II	Technical Information
BO	1212	197	Manager	Budget Office
EZ	1372	200	Scientist	Energy & Environment
NF	1130	200	Computer scientist	NIF Programs
BS	1377	225	Biomedical scientist	Biology & Biotechnology Research
CH	1361	242	Nuclear chemist	Chemistry and Materials Science
CH	1362	242	Analytical chemist	Chemistry and Materials Science
EE	1366	249	Engineer	Electronics Engineering
LO	942	249	Quality assurance engineer	Quality Assurance Office
PE	1369	249	Deputy department head	Plant Engineering
EZ	1330	270	Physicist	Energy & Environment
PT	1352	270	Sr. scientist	Physics & Advanced Technologies
CO	1368	285	Computer scientist	Scientific Computing & Communications
EP	136	304.1/.2	Scientific associate	Environmental Protection
DT	1359	405.3	Administrative specialist III	Defense & Nuclear Technologies
ME	1378	405.3	Administrative specialist III	Mechanical Engineering
DT	1349	405.4	Administrative specialist IV	Defense & Nuclear Technologies
ME	1342	533.3	Sr. technologist-mechanical	Mechanical Engineering
ME	1236	539.1	Engineering	Mechanical Engineering
PE	1300	805.2	Laborer II	Plant Engineering
PE	1255	811.1	Custodian I	Plant Engineering
PE	1256	811.2	CustodianII	Plant Engineering
PE	1259	812.2	Gardener II	Plant Engineering
PE	1301	822.2	A/C mechanic	Plant Engineering
PE	1254	823.1	Carpenter	Plant Engineering
PE	1270	824.1	Industrial electronics	Plant Engineering
PE	1271	824.1	Field electrician	Plant Engineering
PE	1253	825.1	Painter	Plant Engineering
PE	1262	861.1	Rigger I	Plant Engineering
PE	1264	861.2	Rigger II	Plant Engineering
ME	1336	983.1/2/3	Machine repairer	Mechanical Engineering
ME	1337	983.1/2/3	Machine repairer	Mechanical Engineering
ME	1335	983.1/2/3	Machine repairer	Mechanical Engineering

More information on these job postings as well as those at other UC sites and outside organizations is available through the World Wide Web. Go to the Lab's internal home page, click on "Services," then click on "Career Center." Once there, scroll down to "Information and Resources," where links to internal and external postings can be found.

Technical Meeting Calendar

Thursday
4
INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"A Compiler-Based Approach to Specializing Software Libraries," Calvin Lin, University of Texas, Austin. 10:30 am, Bldg. 451, room 1025 (uncleared area). Contacts: Jeffrey Vetter, 4-6284, or Leslie Bills, 3-8927.

Friday
5
INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH
"Exact Analysis of the Cache Behavior of Nested Loops," Erin Parker, University of North Carolina. 10:30 am, Bldg. 451, room 1025 (uncleared area). Contacts: John May, 3-8102, or Leslie Bills, 3-8927.

Monday
8
ENERGY & ENVIRONMENT FORUM
1:30 to 3 p.m., Bldg. 123 auditorium (open area). This is the fourth in a series of informal presentations on the scope and vision of the new Energy and Environment Directorate's programmatic and disciplinary activities. Contact: Mark Strauch, 2-1469.

H DIVISION
"Relation Between the Interaction Potential in a Single-Species System of Molecules and the Existence and Nature of Its Liquid-Liquid, Liquid-Solid, and Solid-Solid Phase Transitions," by George Stell, State University of New York at Stony Brook. 10:30 a.m., Bldg. 319, room 205 (open area). Contact: Francis Ree, 2-7234, or Nancy Kliment, 2-3760.

Monday
22
H DIVISION
"Numerical Modeling of Semiconductors (From Atoms to Just Small)" by Fernando Reboredo Instituto Balseiro and Consejo Nacional de Investigaciones Cientificas y Tecnologicas. 10:30 a.m., Bldg. 319, room 205 (uncleared area) Contacts: Guilia Galli, 3-4223, or Darlene Klein, 4-4844.

Friday
26
BIOLOGY & BIOTECHNOLOGY RESEARCH PROGRAM
"Life Technologies and the Rule of Law," Franklin Zweig, Einstein Institute for Science, Health and the Courts. 1:30, Bldg. 361 auditorium (uncleared area). Diana L. Bradbury, 2-1746.

Deadline for the next calendar is noon, Wednesday, Dec. 27.
The Technical Meeting Calendar will be sent out electronically on Dec. 29.



HOLIDAY NEWS

'Tis the season to address your holiday stress

This is a season of celebration when people expect to share wonderful times with family and friends. Yet people's expectations of the holiday season are often unrealistically high and rarely, if ever, met, says Bridget McKenna, clinical psychologist and manager of the Laboratory's Employee Assistance Program.

The result can be disappointment, sadness, and even depression.

Holidays often cause much stress and discomfort. Most people place unrealistic expectations on themselves by adding extra holiday demands on already overburdened lives. "We often feel compelled to buy the perfect gift, elaborately decorate our homes and host the most fabulous party," says McKenna. Often people do not have the financial or physical resources to meet these unrealistically high expectations.

Additionally, families typically spend more time

together during the holiday season. This can bring both joy and stress. Often, old unresolved conflicts and disagreements will surface, particularly if alcohol is a central part of the festivities. Other family issues such as grieving the loss of a loved one may resurface, causing additional duress. The first holiday season following the loss can be particularly painful and may require additional support from loved ones or a grief support group.

The key to successful holidays is prioritizing both time and expenses. "Allow yourself to be selective about social obligations; quiet time at home with family can be more rewarding than overindulging in holiday shopping and party-going," says McKenna.

The Laboratory offers employees and their families an employee assistance program where they can

meet with a professional counselor on-site or off-site to get support and learn about resources to improve their quality of life. On-site counselors are available during work hours by appointment (925-423-6609). Off-site counselors provided by the CONCERN Employee Assistance Program can provide help 24-hours-a-day, 7-days-a-week (800-344-4222).

This year-round assistance allows employees and their family members to meet with a counselor for up to five free visits. Information on the EAP is also available on the Web (<http://www.llnl.gov/healthserv/Services/eap.html>).

Other on-site resources include Alcoholic sAnonymous, a depression group, stress management classes, and a variety of weight management and exercise options. For more information on these options, call 3-6609.



Lab employees have a gift for giving



Christmas came early for kids of local agencies participating in the Lab's annual Toy Drive for Children. Maintenance/Operations craftspeople, along with B Division employees (top left) once again joined forces to provide handmade and store-bought items. The toys were distributed to agencies such as Family Ties, Rubicon and AIM/Focus, among others. Programs and facilities across the Lab also participated in Lab Lends a Light, donating clothing, toys, food and other gifts to 102 families and 20 agencies. Agency representatives and families who came to the Lab to gather the donations were also able to visit with Santa or put the toys through their paces.



Check out the Employee Ads Web Services site at:
<https://www-ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1998 - Honda Civic Ex Coupe, White, Tinted windows, CD Changer, Power everything. 45k Asking 12K obo 925-447-4119

1988 - Camaro, V8/305, AT, AC, cruise, original owner, 60K on engine, new alternator/battery, 100K miles, runs well \$3500 925-447-8613

1984 - Mazda Rx-7.New Clutch & Tires.Needs Engine.Good Body & Interior.\$500. 510-357-4969

1998 - Acura Integra LS Sport Coupe, black, exc. cond., 27K miles, spoiler, cd, sunroof, cruise control, \$17,500 OBO. 925-294-9288

2000 - Jetta GLS, CD/5 disc changer, silver, pwr doors, security, anti-lock brakes, registration paid until Nov. 2001, still smells new, 15k miles. 925-846-6892

1986 - Toyota Corolla SR5, 2 dr, 5 spd, a/c. Good running condition. \$1500/obo. 925-625-1438

1994 - Chrysler Town & Country Mini Van - 3.8 liter V-6, Auto, AC, AM/FM cassette, leather, roof-rack, excellent condition, 85.6K miles, \$9500 OBO. 925-447-0383

1995 - BMW 525i Sedan, Red/Taupe, Automatic, Sun Roof, Premium Package, Loaded, New Brakes, New Tires, Excellent Maintenance, 72K mi, \$18,888 or B.O. 408-270-2561

1989 - RX-7 GTU, Red, 5-speed, automatic sunroof, PS, CD, 105K. \$4900. 925-634-5856

1988 - GMC SAFARI Mini Van V8 Automactic,Air,Power,Cruise Control,Trailer Hitch,\$2700 OBO Tracy 209-858-5807

1983 - Chevy Blazer, 6.2 liter Diesel, power windows and locks, pull-out tape deck, 2nd owner. \$4,000.00 OBO 925-373-8360

1997 - Taurus GL, loaded, clean inside and out, \$7,450 OBO 925-803-0224

1992 - 1992 Olds Regency - Air, power seats, windows, locks, tilt, cruise, tape, clean. \$6,495 925-454-1694

1994 - Ford Explorer, XLT 4x4, greenish-blue, all-power, new tires, original owner, 94K, \$8,900. 925-443-2271

1988 - Toyota Camery. Automatic. All power. AC. Cassette/AM/FM. 130k miles. \$2900 / OBO. 925-931-9307

1989 - BMW 325ic Convertible. Red/black lthr. Nu: top, AT, xhst, brks, trs, T-blt. Smgd. Only 87K miles. Blue Bk \$10K. \$8,700 Firm. 925-371-8201

AUTOMOBILE ACCESSORIES

Tires/Wheels/Hubs Firestone FR680, P185/65R14.850. Brand new from 2000 Civic. \$250 209-832-2862

Dual Webers 34 PICT carbs for VW (Dual Port) all linkage and parts \$200 OBO 925-443-4336

BICYCLES

1993 GT RTS-2 sull suspension MTN Bike, New tires/tune up\$600 OBO 925-443-4336

Tandem bicycle, Schwinn, excellent condition. new tires, mechanically sound, very clean. \$500.00 925-634-0423

BOATS

1995 Champion Fish & Ski 150 Evinrude Intruder Lorance X55 electronics, Motorguide Brute

55#,AM/FM cassette stereo, excellent condition 15,500 obo. 925-625-2880

1998 TomCat 20 foot trailable sailboat, only been in water 6 months. Unique modern sailing catamaran/power runabout. \$25,000. 510-781-0437

Jet Skis. 1994 Yamaha Pro VXR and 1993 Kawasaki X-2 with removable flotation for beginners. Shoreline trailer with new tires. \$3300.00 or offer. 925-606-0722

20 ft Wahoo Bayrunner fishing boat, 2-motors, compass Ritchie, Radio, Fishfinder, downriggers. All the bells and whistles. Center console. 209-832-1750

1996 Cobia Sport 18ft open bow, great family boat, less than 100hrs, all the extras included, must see to appreciate. \$11,800 209-545-1932

CAMERAS

Twin lens camera-4 lens/offer misc. photo equip.,supplies/albums,etc. 925-735-6002

JVC GR-SXM915 SVHS-C video camera. 3in color LCD, 320x zoom, built-in light, inc battery, charger, and bag. Perfect condition. \$300 obo. 209-832-8360

ELECTRONIC EQUIPMENT

ELECTRIC KEYBOARD. Casiotone 310T, 49 key multi-voice with rhythm maker, chords, arpeggios. Like new, great Christmas gift. \$65 925-443-2245

Hi-End Mitsubitsi complete stereo system multiCD tape pre/tuner-amp turntable matching speakers cabinet plus Forsgate surround-sound \$500 or BO 925-736-7799

Macintosh Performa 6314 75Mhz processor, 15in monitor, lots of games, good contition \$150 or best offer 925-373-9439

GIVEAWAY

1975 - El Camino FREE ! Body good shape. No eng or trans. Call after 4:00 pm o209-835-3352

Heathkit 27 in. TV GR-2700 Mediterranean Cabinet. Needs horizontal drive repair, otherwise excellent. 925-443-0985

1954 Ford Radio It works and its free. 925-447-6670

Old large console radio/ phone/8track good condition 925-371-1465

Aluminum storage cabinet. 3 lockable compartments with shelves and drawers. 27W x 18D x 70H. 510-733-9802

Apollo 1000 Walnut speaker cabinets (4). Speakers are blown and removed but walnut veneer is in excellent condition. Call for details. 209-832-3435

FREE Clean dirt, 3+ Yrds, will help load, you haul. 925-449-8567

Ficus Tree Potted House Plant 8 ft. tall 925-454-1969

Screened in patio cover. You take down and remove. 925-373-8393

HOUSEHOLD

Framed Painting of valley scene by local artist Norma Webb 24x36 \$200, 7-drawer wood desk (not computer desk) 22x52, excellent condition \$150 925-447-8613

Little Tykes Climb & Slide Playhouse. Excellent condition. List price \$59. Sell for \$25. Other like-new baby items: bouncy seat, bath, etc. 925-454-0877

Kenmore Super Capacity Washer. White, used less than 1 year. Very

good condition. \$225 or B/O. 925-443-5693

Chavel floor dressing mirror, oval, cherrywood frame. \$400. 209-545-1548

Solid Oak Dining table w/ 2 leaves. 80 X 40 inches. 6 chairs, 2 with arms. Blue cloth seats. Excellent Cond. \$800.00 or B/O 209-835-3370

Desk flat top, about 2ft x 4ft alder wood, natural finish, 6 drawers \$150 or best offer 925-373-9439

Microwave/Convection Oven Combination, 1000W Countertop Model, Good Condition, Large size (1.9 cu ft?), Built in Turntable and Sensor. \$100/OBO 925-447-2697

Sofa&LoveSeat with 2 recliners-Hunter Green,Green&Wine Chair,Oval Coffee,Round end,Oval sofa tables-Med Oak. All for \$400 or offer. 925-513-3538

Pillow back sofa (\$40) Queen Sofa sleeper (\$40) Rocker recliner (\$20) Two person rocker (\$20) Entertainment center (\$50) 925-447-2119

Couch, large sectional, contemporary style, light color, heavy cotton matl, needs cleaning but no rips or tears. \$150.00 925-449-4796

White bedroom set for girls room, includes dresser, desk/bookcase, headboard w/purple trim, \$250 925-449-5513

Student desk, solid wood, white/yellow drawer fronts, brass hardware. \$75 OBO 925-443-4461

Water softener \$150, lawnmower \$50,breadmaker \$30.Please leave message. 925-454-2976

WARDROBE moving boxes; cardboard wardrobe moving boxes; used one day for local move; have 15; \$7 each; also china packing boxes/filler; 925-634-1110

Turkish Carpets and Kilims, all handmade, several sizes, styles and colors. Some antiques. 925-449-9514

Brass fireplace screen with bay window glass doors. \$75.00 925-447-5261

Washer and Dryer, Roper (made by Whirlpool). Very good condition. \$350/pr. You haul. 209-892-4474

Custom Cabinets, vanities, entertainment centers, call eves. 925-449-3152

Modern style black iron double bed with pedestal frame, mattress and box spring; black lacquer night stand and armoire. \$350.00 for all. 209-823-4658

Stove, electric, GE free standing, almond, 30W x 25.5D x 71H. Microwave plus large oven. Very good cond. \$100. 925-600-0082

Artificial Xmas tree 71/2 ft.Siberian pine white \$30, assorted silk plants call, assorted clay planters \$20, 6 wood louvered shutters new \$25 925-371-1465

Large metal desk, black w/ wood-grain top, 3 drawer pedestal/typing return, fair condition - \$25. Bale of shavings for small animal cage - free. 925-606-6305

BUNKBeds 2Sets: White-Metal Twin/Twin EX.Cond \$125/ofr; Blue-metal Twin/Full Futon Foldout to Sofa. EX.Cond.\$175/ofr; KIT.TABLE/4chr.Wood \$50/ofr. 925-837-8780

Dryer - Kenmore electric with new element, almond \$95 925-443-5565

Wedding Set - .5 carat solitar w/6 smaller diamonds. Surrounded by 12 diamond band. Custom design. Gorgeous!! Originally \$5,000, sale \$2,500. 925-245-0626

Coffee table and two matching side tables, solid oak, medium gold oak color, French country style, \$100 for

all. 925-606-6155

Dinnette set. Modern design. Smoked glass top with black metal frame. 4 black metal frame chairs. 42x42 inches. Excellent condition. \$199 obo. 925-455-1689

DESK, metal, solid, 50 x 19, great for bedroom. Blue. Drawers on right can double as dresser \$45 Livermore 925-447-7070

Steelcase desk (30x45) and credenza (20x60), beige w/woodgrain top. Nice condition! \$25 each or \$40 takes both. 925-443-2821

Thomasville bedroom set, bookcase, headboard with footboard, triple-dresser with mirror, night-stand.Excellent cond. \$800 925-447-0740

Leather lift belt,bowling balls/w bags 925-735-6002

Whirlpool washer.Very good condition. \$200. You haul. 925-855-0607

Heirloom 80 Fireplace Insert. Excellent Condition. You remove and haul. \$400 or Best Offer. 925-447-7857

Entertainment Center, wood, hunter green. 55in W X 45in H X 22in D, Glass wood framed door for stereo, 30in W X 27in H opening holds 36in TV, \$300.00 209-839-9229

Neck problems? Buy the only sleeping pillow endorsed by the American Chiropractic Association. \$39 ea. 30-Day Money Back Guarantee 510-791-8623

Seasoned Almond fire wood, \$100/cord, U-haul, Tracy. 209-836-4425

Custom daybed (single bed) covers from model home. 2 sets of 2 each; bolsters/pillows. Neutral colors. Never used. \$150/set. 925-243-0760

MOTORCYCLES

Looking for Honda MB5, Kawasaki AR50, or Yamaha DT50. Running or not. 209-824-2177

MUSIC INSTRUMENTS

Electric Guitar. Black Gibson Epiphone model with off-white pick guard. Excellent condition! New strings included. \$125.00 925-447-3387

Yamaha keyboard, like new, \$75 OBO. 925-449-7086

DRUMSET Pearl Export Series 5 piece set plus Zildjian cymbals (Hi-Hat and Crash) **PRISTINE** \$600 925-443-6617

Conn Clarinet B flat Excellent Condition! \$200.00 firm. 925-447-0444

1983 Kawai Console piano, with bench, practice pedal. Little used; excellent condition. Recent tune and appraisal, \$2000 925-443-8782

LOST & FOUND

Money(\$) found in B543 near rm 2083 on Tuesday morning, Dec 19th. Call 3-1405, or 2-9858. Give amount and denominations to claim.

LOST UMBRELLA 12/14 - Lost near CAIN booth at West Cafeteria/parking lot. Unique 2000 edition print repeated on umbrella - sentimental value. 209-836-5155

Lost 1 earring. Clip-on, rectangular w/different sizes/styles of amber/gold/brownish-colored stones, very shiny. 209-525-8277

LOST: Bag of music CDs, in or around B132 parking lot. 925-606-0260

Found 12/11 pair of AO safety glasses on Innerloop rd. south of tr.4525 Bifocals in blue case. 925-

373-3941

FOUND, keys, one auto, 2 cabinet on ring with scrimshaw art. Found east of B-243, South of B-241 near corp yard. To claim identify the tag. 925-961-1658

MISCELLANEOUS

HI-FI SUBWOOFER. Optimus Pro SW-12 Radio Shack), 12 inch speaker, crossover network with stereo connections. Like new, still in box \$75. 925-443-2245

Olympus microcassette transcribing machine with accessories. In new condition. \$250 new, will sell for \$100/BO. 925-443-2821

Boy/Girl 0-2 yrs. clothes, Old Navy/Gap/Gymboree brands. Exersaucer, bouncy seat, car seats, oak changing table. Excellent condition and prices. 209-832-2862

Samsonite 24 inch hardside suitcase (wineberry) \$35, 7-drawer wood desk 22x52 (not computer desk) excellent condition \$150, toaster oven \$20 925-447-8613

Peg Perego stroller, converts to carriage, many features, \$250 new, \$75. Chicco activity table w/train, building blocks, like-new, was \$35, now \$15. 925-454-0877

Four Backstreet Boys tickets for sale at Oakland Arena Friday March 2,2001 7:30pm. Please call if interested. 925-485-1585

Woodsplitter.Duerr - 20T, mobil tow, used approx 30 hrs. \$850.00 OBO. 209-239-3072

8 yr old B. 1/2 Qtr. 1/2 Andalusian G. 14.3H. Loads, clips, ties, bathes. Needs TLC. \$1000/OBO. 209-327-0881

Artificial Christmas tree and lights, \$35, 2 lightweight cots with mattresses, \$25 each, camping stove and lantern \$45, make offer for any or all 925-736-7799

Chipper, 10 hp, never used,clean up all those leaves/branches up to 3inch \$495 new, will sell for \$375. can deliver to LLNL 209-847-1231

Used medical supplies and equipment will be sent to Red Cross clinics in Torreon,Mexico. Receipt available. 925-447-7394

BACKSTREET BOYS - March 2, 2001 @ Oakland Arena. Sec 108 Row 27 - great seats. \$150 each. 925-413-3274

PETS & SUPPLIES

11 yr old breeding stock brood mare. Proven color maker. 14.3H. Loves trails and arena work. \$2500/OBO 209-327-0881

Hay for horses - 3rd cut alfalfa \$9/bale. 925-443-1547

Dog House / Travel Cage, Large lightly used. \$10 (Orginal Walmart \$30) 925-447-2697

RECREATION EQUIPMENT

Twinner jog stroller; \$100 OBO 925-484-8447

Nintendo64 Game Console, 3controllers, additional memory cards, Tremor pack, 7games including PD. Perfect, ideal for Christmas. \$320 or BO 925-736-7799

PipeWorks. Kids construction toy. Build forts, slides, climbing structures. Combination of several sets. Good Condition. \$25 925-447-2697

Shell, for full size pickup - standing headroom - \$50 925-447-5194

RIDESHARING

Express your commute, call 2-RIDE for more information or visit the web site at <http://www-r.llnl.gov/tsmp/> for more information

Due to space limitations, *Newsline* may withhold ads that have already run. They will still appear on the Web.

CLIMATE

Continued from page 1

These measurements show an average global surface temperature increase of 0.6 degrees C from 1860 to 2000, with a 0.15 degrees C increase since 1996. He presented the supporting data for these figures as reported in his work with the Intergovernmental Panel on Climate Change.

Karl, currently editor for the *Journal of Climate* and an associate editor for *Climate Change*, also briefed the White House and testified before Congress on climate variability and change. For his DDLS presentation, Karl concentrated more on reporting the panel’s findings rather than interpreting trends or debating ways to halt global warming.

As Karl explained, the intergovernmental panel gathered data from numerous sources: land-based weather observation points throughout world (mostly in the Northern Hemisphere), lower troposphere readings from weather balloons and satellites, sea-based surface and subsurface readings from ships and other sensors. His data even included “paleodata,” such as tree rings, writings and other findings indicative of temperature levels at specific places and times throughout the last millennium.

“Bore hole data from hundreds of sites around the world show temperatures in the 20th century are significantly higher than 400 to 500 years ago,” added Karl.

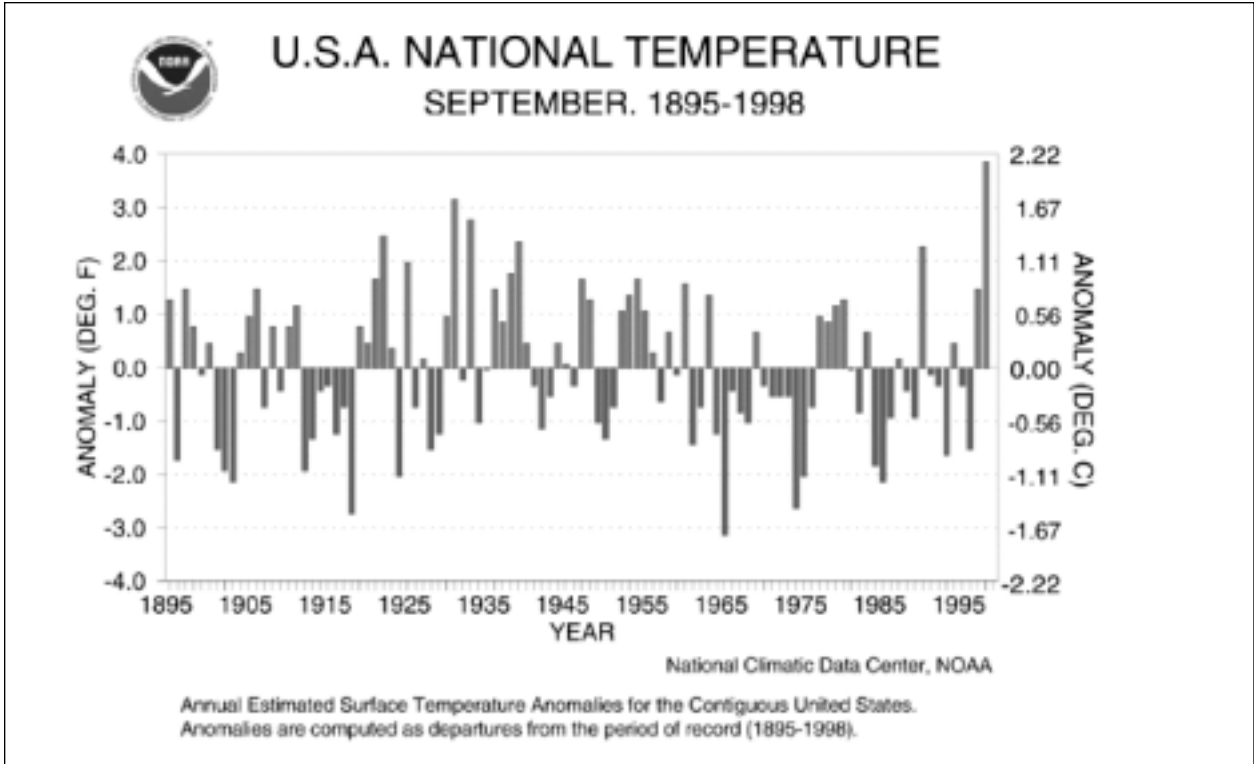
So many different sources showing the same pattern, Karl said, “give us great confidence in this data.”

“The largest increase has been in the average nighttime temperatures,” Karl told the assembled Lab employees. “And we’ve seen a great increase in the freeze-free growing season throughout the Northern Hemisphere.”

Breaking down the average global surface temperatures in the twentieth century, Karl’s data clearly showed a mild warming from 1901-1945, a slight cooling from 1946-1975, and the greatest warming from 1976-1999.

One apparent result of the warming trend has been the reduction in snow cover and retreat of mountain glaciers in non-polar regions. “Satellites show a 10 percent decrease in global snow cover since the late 1960s,” Karl explained. He also reported a decrease in Arctic ice thickness over the last few decades.

Karl further explained that the higher temperatures are evaporating more of the world’s oceans, creating more cloud cover and increased precipitation over the last few decades. The increased cloud cover could, he suggested, account for the greater



increase in nighttime temperatures than daytime temperatures.

“Weather satellites have shown an increase of water vapor in the lower troposphere of several percent per decade over the Northern Hemisphere since the 1970s,” said Karl. “We’ve seen a two percent increase in cloud amount over the ocean since 1952, and a two percent increase in total cloud amount over land in the twentieth century.

“We’ve clearly seen far more damage from (Northern Hemisphere) precipitation events in the 1990s than ever before,” stated Karl. “Although, we

do not show an increase in tornadoes or hurricanes in the twentieth century.”

Answering questions after the lecture, Karl addressed the reason for the greater increase in land temperatures over ocean temperatures. “This would be concurrent with land having a greater response to solar radiation than water.”

As to the disparity between the amount of data from the Northern and Southern Hemispheres, Karl replied, “There just isn’t as much land (in the south), and the weather stations reporting data are much more scattered (than in the north).”

When cleaning, be careful of what you pour down drains

The Environmental Protection Department (EPD) reminds employees to follow policies and controls governing discharges to the sanitary sewer system when cleaning out labs and workplaces during the holiday period.

People often take the opportunity at this time of year to clean out work spaces. Please

observe guidelines and warnings posted near drains and retention tanks. For more information on disposal to the sanitary sewer, contact the Water Guidance and Monitoring group, 2-2300, or check the “Guidelines for Discharges to the Sanitary Sewer System” in the Lab ES&H Manual on the Web: http://www-r.llnl.gov/es_and_h/esh-manual.html.

Modesto - Carpool of two looking to meet/blend into carpool of four. Each drive one week. Meet near mall. Work hours 7:30-4:00 flexible 209-557-0456, ext. 3-4079

Montclair/Oakland - Montclair/hwy 13, friendly vanpool, reading lights, reclining seats. 8:15 - 5; Stops Montclair village, Lincoln/Hwy 13, \$120/Mo. 510-547-4040, ext. 2-0064

San Mateo - Riders needed for this 14 passenger van, with capt. chairs, reading lights and more. Ask for Jerry. 650-281-7820, ext. 3-7857

Lafayette - LaMOrinda (also Walnut Creek stop at Rudgear Rd) luxury vanpool (reclining seats, reading lights) 8-4:45. \$115/mo (pretax reduction available) David 925-376-5346, ext. 2-3005

Patterson - Vanpool has seats available. Work hours: 7:30 - 4:00. Kim 209-892-2118, ext. 2-9502

SERVICES

TUTORING in high school and college chemistry and math. 925-443-2095

SHARED HOUSING

Livermore - Partly furnished room in 2BD/1BA house with laundry,phone,full priveleges on

rural setting liv 350.00+1/2 utilities. 925-371-5371

TRUCKS & TRAILERS

1985 - GMC Jimmy 4x4, 2dr,V6 2.8L,A/T, Two tone blue. Needs some work and interior TLC. 140K miles, Passes smog! \$1,850 925-443-7913

1987 - 24 foot prowler trailer. sleeps 6, good condition. ac/fridge, oven. \$3500 209-368-4286

1990 - Chevrolet Cheyenne pickup. AT, PS, PB, AM/FM Cass., Tinted Windows, Dash Pad, Custom Seats, Bedliner. 98K miles. Excellent Cond. \$6100/OBO 925-443-0842

1996 - 4Runner, white, CD, moon-roof, warrenty, great gas mileage, 2x4, excellent condition, keyless alarm entry, moving-must sell,\$14,500 OBO. 925-736-4904

Stainless grill screen for cold weather. For GMC 94-98 pickup, GMC 94-99 Yukon or Suburban. New. \$30 OBO 925-447-4503

1988 - GMC MiniVan,V8 Automatic,Air,Power,Cruise,Trailer Hitch \$2700 OBO Tracy 209-858-5807

VACATION RENTALS

Sea Ranch - Oceanview home. No smoking. No pets. Adults only.

2BR(KQ)/2BA 1700sqft. Hike. Bike. Whale watch. Kayak. Swim. Tide pool. 925-443-5086

SOUTH LAKE TAHOE - 3 Bedroom 2 Bath Chalet, nicely furnished,quiet area ,all amenities,close to all ski areas,Only a few weekends left!Reserve Now! 209-599-4644

Pinecrest - Cabin available near Dodge Ridge skiing. 3 bdrm/2 bath, fireplace w/wood, microwave, pool table, level cleared access to covered parking, \$195/wknd 925-449-5513

Maui, HI - Kahana Reef ocean-front 1BR/1BA condominium. Beautiful two-island view, ocean-side pool, and BBQs. Low LLNL rates for year-round reservations. 925-449-0761

WANTED

Will pay person skilled in preparing good lab resumes to help me prepare and update mine. 925-606-0359

Wanted someone who can fire some greenware 19 small pieces for a fee call steve 209-526-6272

Refrigerator WANTED:White,Max.66in.tall,2doo r with bottom freezer or side-by-side. Can be older unit if in good shape. >\$200 408-247-1112

Row boat, preferably made of wood. 925-447-5582

Looking for someone to embroider (machine) name on Christmas stocking for granddaughter. Will pay for service. ASAP please 925-837-0863

Wanted 45 RPM records from 1950s and 1960s in good condition. 925-454-9291

Trixie Belden books wanted for 5th grader. Will buy paperback or hardback. 925-484-4785

Wanted: Mac 5XX series computer - cheap. 925-455-4484

Wanted: Carpenter to build custom book shelves over fireplace. I have picture of design desired. 925-443-2243

wanted, 19 inch or larger TV, water softner, record turntable, and washer and dryer for apartment. 209-599-7199

Large curio cabinet or china cabinet with hutch for collectible items. Prefer dark wood. 925-243-0760

Guidelines

Newsline is not responsible for any errors contained in the classified ads. It is up to the employee to proofread his or her ad to make sure it contains the correct data, including the phone number.

Employees are reminded that only car- and vanpool ads may contain Lab extensions. E-mail addresses are not allowed.

Due to space limitations, *Newsline* cannot run ads that are submitted in all capital letters. “Personals” ads are not permitted either.



THE BACK PAGE

DIRECTOR'S OFFICE
Continued from page 1

- Improve the ES&H home page to include options such as feedback mechanisms and frequently asked questions.
- Centralize the ES&H database.
- Complete the update of the ES&H Manual, make the numbering system user friendly and improve the search capability.

Perhaps most important, however, is the category of improvements needed to make integrating safety into your work easier. We recognize that, in the intense effort to reach the ISM verification milestone, some of the processes or mechanisms that were put in place weren't the most efficient or user-friendly way of doing things. They got the job done, but didn't make carrying out the Laboratory's mission any easier. I firmly believe that for ISM to be viable in the long term, our employees must view it as value added and reasonably easy to do. We are therefore gathering feedback from employees on what aspects of ISM need to be improved to better assist them in carrying out their work.

We have now held three focus groups since the end of October. Some 33 employees participated,



being selected from a pool of names suggested by the various directorates. For this set of focus groups, we asked for facility managers, FPOCs, responsible and authorizing individuals (RIs, AIs), and workers.

The groups were asked three basic questions: What aspects of ISM are working well? What aspects do you find to be hindrances to doing your work? What are your recommendations for improvement?

The participation was very active and the discussions free-flowing. A report was made to the ISM Rollout Implementation Team (RIT), from which we isolated 18 suggestions for improvement. We developed an action plan in response to the groups' suggestions, and presented it to the participants in a meeting yesterday afternoon.

Newsline will include an article about the focus group results in January. However, I can give you some of the highlights here. For example, as far as what's working well, many people cited a heightened safety consciousness throughout the Lab — some said it was the highest they had seen during their careers here. They also said that having the online ES&H Manual was very useful, and that the Integration Work Sheet (IWS) offered many benefits.

Interestingly, the IWS was also cited as a hindrance, as were problems in procuring outside services.

The follow-up article on the focus groups will go into more detail on our findings and what actions will result. But for now, I want you to know the feedback step has begun. Just as ISM calls for feedback and improvement in safe work planning and execution, the process itself must be continuously improved.

We will continue to gather feedback in a variety of ways as we work to enhance the Laboratory's safety culture. We intend to use focus groups regularly at the institutional level. And, as some of you have already experienced, feedback will be gathered in the directorates through formal mechanisms such as focus groups and surveys, and informally through regular staff meetings.

The point of the feedback effort is that employee involvement is key to ISM's success, and to the Lab's ongoing effort to improve our ability to protect our employees and our neighbors. LLNL and DOE are firmly committed to ISM for the long term. It's well worth the effort to make ISM as efficient and effective as possible. We need your comments, suggestions, and first-hand observations to help us improve. Please make them freely through your line organizations, your assurance manager or to me directly.

Den Fisher is the associate deputy director of

BELL

Continued from page 1

of the simulation broke new ground," said Curtis, who describes his job as "tuning up codes to make them run faster."

Curtis and other members of the team knew the paper they had submitted was among the finalists for the Bell award. Nonetheless, "I was a little surprised that we won," Curtis said. "The flop rate of the code was not that great."

However, he said the innovative adaptive mesh refinement code provided "high resolution where you need it" — in this case the simulated shockwave — reducing the run time by an esti-

mated 40-fold. The team will start running simulations on ASCI White early next year.

"Bruce is a person with almost unique skills. He is one of just a few people in the world who fully understand all of the details of a computer as well as how applications 'fit' on them and run. Consequently, he is sought out by scientists both inside and outside of LLNL to assist in maximizing the performance of codes," said Dave Cooper, AD for Computation. "His accomplishment of being on the winning team two years in a row is like winning back-to-back Oscars!"

Cooper presented Curtis with a clock and gift certificate during a Livermore Computing staff meeting last week for his part in this year's

Gordon Bell Prize. Curtis did not attend SC 2000.

Curtis was a member of the Laboratory-led team that earned the 1999 Gordon Bell Award for best performance. IBM and the University of Minnesota also collaborated in that award-winning submission, "Very High Resolution Simulation of Compressible Turbulence on the IBM SP System." The team studied the resultant turbulence when a shock wave passes through the interface of two fluids. They solved a supercomputing problem with broad applications including supernova evolution, combustion physics and supersonic vehicle propulsion and dynamics.

The complete winning submission is available on the Web: <http://www.flash.uchicago.edu/~fxt/cell3d.html>.

NANOSCIENCE

Continued from page 1

attack major programmatic challenges," he said.

Nanostructures exhibit physical properties that are fundamentally different from those of the corresponding bulk material. For example, a nanometer-sized piece of silicon has properties different from several millimeters of silicon. By understanding nanostructures, researchers hope to synthesize materials with entirely new properties.

Major nanoscience research efforts are under way at University of California campuses and the Department of Energy, which is part of a \$227 million federal National Nanotechnology Initiative that was announced by President Clinton earlier this year. The U.S. semiconductor industry is a strong backer of the initiative because electronic chips are rapidly headed into the nanometer realm.

The workshop featured overviews of current areas of Lab nanoscience research and modeling, as well as supporting imaging and characterization resources that are available. Physicist Andrew Quong reviewed the importance of nanoscale

coatings for optics and targets of the National Ignition Facility, the role of nanoscience in the Lab's Extreme Ultraviolet Lithography effort for advanced semiconductors, and nanoscale multilayers developed by Lab chemist Troy Barbee for NASA satellites imaging the sun's corona.

Quong also cited the promise of helping to meet the goals of stockpile stewardship by gaining a better understanding of how special nuclear materials and high explosives age.

Workshop participants discussed the potential of "smart" materials such as quantum dots, which are structures as small as a single nanometer and made out of material such as silicon and germanium. The dots' small size (containing as few as 100 atoms) results in new material properties dictated by quantum mechanics, such as light of a certain wavelength. Possible uses for the dots, under development at the Lab and elsewhere, include biosensors, fluorescent tags, and optical switches operating at extremely fast speeds of 1 picosecond (trillionth of a second) or less.

"We don't know all the potential applications for nanostructures," said physicist Giulia Galli Gygi. She suggested that Lab specialists in differ-

ent fields could help each other. As an example, she said that nanoscale-modeling work by materials scientists could aid Lab biologists, whose research involves such nanometer-scale molecules as DNA and proteins.

McElfresh said workshop leaders will be putting together working groups to take the next steps to strengthen and coordinate the Lab's nanoscience efforts. One idea is to compile a list of research topics that scientists from several disciplines could study together.



NEWSLINE
UC-LLNL
PO Box 808, L-797
LIVERMORE, CA 94551-0808

Newsline takes a holiday; ads, calendars to go electronic

Happy holidays. This is the last edition of *Newsline* for 2000. The paper will resume publication on Jan. 5 with the annual Year in Review.

Classified ads, the Weekly Calendar and the Internal Transfer Opportunities will not appear in print until Jan. 12. All ads will continue to be

posted electronically. The Technical Meeting Calendar will be delivered electronically during the weeks of Dec. 27 and Jan. 3.

NewsOnLine will be published once a week, on Dec. 27 and Jan. 3. Twice-a-week publication will resume the week of Jan. 8.

